

Claims:

1. An apparatus, comprising:
a microchip including a personal computer with a general purpose
microprocessor on said microchip; and
5 a Faraday Cage surrounding at least a portion of said microchip.
2. The apparatus of claim 1, wherein an operating system associated with said
apparatus includes a number of independent components, each component having its
own firewall.
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3. The apparatus of claim 1, wherein said microchip includes a special purpose
microprocessor.
4. The apparatus of claim 1, wherein said microchip substantially includes a
15 personal computer on said microchip.
5. The apparatus of claim 1, wherein said microchip is at least partly surrounded
by at least one Faraday Cage.
- 20 6. The apparatus of claim 1, wherein said microchip is substantially surrounded
by at least one Faraday Cage.
7. The apparatus of claim 1, wherein said microchip is substantially surrounded
by more than one Faraday Cage.
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8. The apparatus of claim 1, wherein said microchip is configured for a network
connection including wave division multiplexing or dense wave division multiplexing.
9. The apparatus of claim 1, wherein said microchip is configured for a wireless
30 network connection including CDMA (code division multiple access) or wideband
CDMA.

10. The apparatus of claim 1, wherein said apparatus includes a plurality of inner firewalls configured to operate within a personal computer, which is configured to operate in a network of computers;

said personal computer including at least two microprocessors;

5 said plurality of firewalls configured to deny access to at least a first microprocessor of said personal computer by another computer through a network connection with said personal computer during a shared operation; and

10 said plurality of firewalls configured to allow access to at least a second microprocessor of said personal computer by said another computer through said network connection with said personal computer during said shared operation.

11. The apparatus of claim 10, wherein a configuration of said firewall is capable of being changed by a user of said personal computer or by an authorized network administrator.

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12. The apparatus of claim 11, wherein said change in a firewall configuration is made, at least in part, by using field-programmable gate arrays (FPGA's).

13. The apparatus of claim 11, wherein said change in a firewall configuration involves a motherboard.

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14. The apparatus of claim 11, wherein said change in a firewall configuration involves a manual switch.

15. The apparatus of claim 10, wherein said firewall includes a hardware component.

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16. The apparatus of claim 10, wherein said firewall includes a software component.

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17. The apparatus of claim 10, wherein said firewall includes a firmware component.

18. The apparatus of claim 10, wherein said shared operation is initiated by a user of said personal computer.

19. The apparatus of claim 10, wherein said shared operation is initiated by said
5 another computer.

20. The apparatus of claim 10, wherein at least a part of said personal computer is idled by a user of said personal computer.

10 21. The apparatus of claim 10, wherein said firewall denies access at least temporarily to a microprocessor of said personal computer by said another computer through said network connection during said shared operation.

22. The apparatus of claim 10, wherein said firewall allows access at least
15 temporarily to a microprocessor of said personal computer by said another computer through said network connection during said shared operation.

23. The apparatus of claim 10, wherein said network of computers includes an Internet.
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24. The apparatus of claim 10, wherein said network of computers includes a World Wide Web.

25. The apparatus of claim 10, wherein said network connection includes an
25 optical fiber connection substantially directly to said personal computer.

26. The apparatus of claim 10, wherein said personal computer is configured for a dense wave division multiplexing (DWDM) network connection.

30 27. The apparatus of claim 10, wherein said personal computer is configured to function as one of a master and a slave in said shared operation.

28. The apparatus of claim 10, wherein said personal computer is configured to be controlled by a remote master controller.

29. The apparatus of claim 10, wherein said shared operation is one of parallel processing or multitasking.

5 30. The apparatus of claim 10, wherein said another computer is another personal computer connected via a peer-to-peer connection to said personal computer.

31. The apparatus of claim 10, wherein said personal computer is configured to communicate with said network through a connection having a minimum speed of data
10 transmission that is greater than a peak data processing speed of said personal computer.

32. The apparatus of claim 31, wherein at least one microprocessor of said personal computer is configured to communicate with said network through a connection having a minimum speed of data transmission that is greater than a peak data
15 processing speed of said at least one microprocessor.

33. The apparatus of claim 10, wherein said personal computer has at least four microprocessors.

20 34. The apparatus of claim 10, wherein said personal computer has at least eight microprocessors.

35. The apparatus of claim 10, wherein said personal computer has at least 16 microprocessors.

25 36. The apparatus of claim 10, wherein said personal computer has at least 32 microprocessors.

37. The apparatus of claim 10, wherein said personal computer has at least 64
30 microprocessors.

38. The apparatus of claim 10, wherein said personal computer has at least 128 microprocessors.

39. The apparatus of claim 10, wherein said personal computer has at least 256 microprocessors.

40. The apparatus of claim 10, wherein said personal computer has at least 512 microprocessors.

41. The apparatus of claim 10, wherein said personal computer has at least 1024 microprocessors.

42. The apparatus of claim 10, wherein said firewall is substantially a hardware component.

43. The apparatus of claim 10, wherein said personal computer is configured for a wireless connection.

44. The apparatus of claim 43, wherein said wireless connection is to said network.

45. The apparatus of claim 10, wherein a part of an operating system associated with said apparatus includes a number of independent components, each component having its own firewall.

46. The apparatus of claim 10, wherein an application program associated with said apparatus includes a number of independent components, each component having its own firewall.

47. The apparatus of claim 10, wherein a part of an application program associated with said apparatus includes a number of independent components, each component having its own firewall.

48. The apparatus of claim 10, wherein power is interrupted to a network-accessible portion of a volatile memory of said personal computer to erase all files in said network-accessible portion, said network-accessible portion being located outside at least one said inner firewall.

49. The apparatus of claim 10, wherein all files are overwritten in a network-accessible portion of a non-volatile memory of said personal computer to erase said files, said network-accessible portion being located outside at least one said inner firewall.

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50. The apparatus of claim 1, wherein said apparatus includes a plurality of inner firewalls configured to operate within a personal computer, which is configured to operate in a network of computers;

10 said personal computer including at least two microprocessors and at least two memory hardware components;

 said plurality of firewalls configured to deny access to at least a first microprocessor and at least a first memory hardware component of said personal computer by another computer through a network connection with said personal computer during a shared operation; and

15 said plurality of firewalls configured to allow access to at least a second microprocessor and at least a second memory hardware component of said personal computer by said another computer through said network connection with said personal computer during said shared operation.

20 51. The apparatus of claim 50, wherein said firewall is configured to deny access to at least said second memory hardware component of said personal computer by said personal computer during said shared operation.

25 52. The apparatus of claim 50, wherein said first memory hardware component is a hard drive device.

 53. The apparatus of claim 50, wherein said first memory hardware component is a flash memory device.

30 54. The apparatus of claim 50, wherein said first memory hardware component is a flash memory device.

 55. The apparatus of claim 50, wherein said second memory hardware component is a random access memory (RAM) device.

56. The apparatus of claim 50, wherein said second memory hardware component is a hard drive device.

5 57. The apparatus of claim 50, wherein said second memory hardware component is a read-only compact disk drive (CD-ROM) device.

58. The apparatus of claim 50, wherein said second memory hardware component is a read-only digital video disk drive (DVD) device.

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59. The apparatus of claim 50, wherein said first memory hardware component includes a BIOS.

60. The apparatus of claim 50, wherein a user of said personal computer retains preemptive control of at least said second memory hardware component.

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61. The apparatus of claim 50, wherein a user of said personal computer retains preemptive control of all components of said personal computer.

20 62. The apparatus of claim 61, wherein said personal computer has a plurality of microprocessors.

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63. The apparatus of claim 50, wherein said personal computer functions as a master in said shared operation.

64. The apparatus of claim 50, wherein said personal computer functions as a slave in said shared operation.

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65. The apparatus of claim 50, wherein said second memory hardware component is volatile memory.

66. The apparatus of claim 50, wherein said first memory hardware component is non-volatile memory.

67. The apparatus of claim 66, wherein said non-volatile memory is one of a magnetic random access memory (MRAM) or ovonic unified memory microchip

68. The apparatus of claim 50, wherein said second memory hardware
5 component duplicates a first memory hardware component.

69. The apparatus of claim 50, wherein said first memory hardware component is read and write memory.

70. The apparatus of claim 50, wherein said second memory hardware
10 component is read-only memory.

71. The apparatus of claim 50, wherein any hardware component, software file,
or firmware file can have its own inner firewall.

72. The apparatus of claim 50, wherein at least two of a hardware component, a
15 software file, or a firmware file can be grouped exclusively together inside an inner firewall.

73. The apparatus of claim 1, wherein said apparatus includes a plurality of inner
20 firewalls configured to operate within a personal computer, which is configured to operate in a network of computers;

said personal computer including at least one microprocessor and at least two
memory hardware components;

25 said plurality of firewalls configured to deny access to at least a first memory hardware component of said personal computer by another computer through a network connection with said personal computer during a shared operation; and

said plurality of firewalls configured to allow access to at least a second memory hardware component of said personal computer by said another computer through said
30 network connection with said personal computer during said shared operation.

74. The apparatus of claim 1, wherein said personal computer has a controller component that controls said microprocessor of said personal computer.

75. The apparatus of claim 1, wherein said personal computer includes a plurality of microprocessors.

76. The apparatus of claim 1, wherein said personal computer is substantially
5 contained in a respective single microchip.

77. The apparatus of claim 76, wherein said personal computer is substantially contained in a single respective microchip having a plurality of microprocessors.
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78. The apparatus of claim 1, wherein said personal computer is an appliance with a microprocessor.

79. The apparatus of claim 78, wherein said appliance includes one of a
15 handheld personal digital assistant, a telephone, a pager, a television, a game, a videotape player/recorder, a video camera, a compact disk (CD) player/recorder, a digital video disk (DVD) player/recorder, a radio, a camera, a printer, a fax machine, and an automobile.

20 80. An apparatus, comprising:
a microchip including a general purpose microprocessor and one or more photovoltaic cells.